

to a final decision thereupon, we are not yet prepared to lay any specific recommendation before your Majesty, both in consequence of the building not being sufficiently advanced, and the result of the inquiries and experiments made and making by and under our direction not being sufficiently ascertained, to justify us in coming to any final conclusion in this respect. And with reference to that part of the architect's report which relates to local improvements in the neighbourhood of the Palace, we consider that, however deserving of attention the improvements in question may be, they do not come within the inquiry with which we are intrusted.

ALBERT.	COLBORNE.
LYNDHURST.	CHAR. SHAW LEFEVRE.
SUTHERLAND.	ROBERT PEEL.
LANDSDOWNE.	J. R. G. GRAHAM.
LINCOLN.	ROBERT HARRY INGLIS.
ABERDEEN.	HENRY GALLY KNIGHT.
J. RUSSELL.	B. HAWKE, JUN.
PALMERSTON.	SAMUEL ROGERS.
MELBOURNE.	THOMAS WYKE.

Whitehall, July 29, 1843.

THE ATMOSPHERIC RAILWAY.

THE preliminary experiment of the principle upon which the Atmospheric Railway is to act, was made on Saturday, and it answered in every respect the expectations of the patentees, Messrs. Clegg and Samuda, as well as of all those concerned in the introduction of this most important national project into Ireland. The experiment was one made solely for the satisfaction of the engineers, the works being as yet in a very crude and imperfect state, and, owing to the long continuance of dry weather, there was scarcely as much water in the reservoir as would charge the boilers. Every precaution was taken to prevent accident to persons who might happen to be on the line of rails either from motives of information or curiosity. A cordon of police was stationed along the line, and large placards were posted in various directions to warn the public of the consequences. Numbers of persons were attracted to the place, and the anxiety of the men who have been employed on the works was intense, as the whole affair has been a perfect riddle to them, solved in a variety of ways, some the most ludicrous. At five o'clock the scientific gentlemen interested arrived, and the steam was soon after laid on, when the leviathan air-pump commenced its labours—the mercury in the barometer soon displayed with what success. In sixty strokes an altitude of twenty inches was obtained, and shortly afterwards it reached twenty-two inches and one-tenth. This was the realization of the most sanguine expectations, and left no room for doubt as to the completeness and power of the machinery and its capability of producing sufficient vacuum. Mr. J. Samuda asserts that he will, with the efficient means at his disposal, have twenty-seven inches at any time, if required. The power may be estimated thus:—The exhaustion indicated by each inch of mercury in the barometer gauge is capable of propelling nearly nine tons on a level road, or nearly two and a-half tons up an inclination of 1 in 115—that of the Dalkey line—at a velocity dependent on the speed of the air-pump piston with the present apparatus; each double stroke of the air-pump is equivalent to upwards of two miles per hour; and the Dalkey engine being constructed to work at the rate of twenty-four double strokes per minute, it follows that, if desired, the trains may be moved at upwards of fifty miles per hour! Thus far having progressed, the next course pursued was to introduce the piston into the tube at the equilibrium valve near Glasahule-bridge; but while this was being done, the key of the fly-wheel slipped, and a delay of nearly an hour elapsed before it was adjusted. It has been stated before that the experiment was but preliminary, and to this may be ascribed this trifling incident, for accident it cannot be called. The anxiety of the spectators was now considerably increased, and an hour was spent in speculations of all sorts by those who were not aware of the cause of the delay. It was a time of anxious hope of success on the part of the uninformed, confidence abiding in those who knew the utter impossibility of failure. The fly-wheel movement being rectified, the engine was set going once more, but not on its condensation principle, for there was no cold water to condense. It was at high pressure and half power; the height of mercury in the gauge varied from eleven to fourteen inches. The signal was given by men stationed with small flags on the line, and the piston carriage, with two passenger carriages, one second and one third class attached, moved along *per se* amid the joyous shouts of those assembled. It seemed more as if some magic power were at work—some force that no human energy could awaken into existence. In four

minutes they accomplished the distance, one mile and a quarter, retarded considerably at starting by the breaks on the wheels, to keep the motive power under proper control, as also at the terminus, not to let the train overshoot the line of rails. Mr. J. Samuda was on the piston carriage, and several gentlemen took seats in the other carriages, and they describe the motion to be more than ordinarily smooth and easy—the curves were passed without the slightest perceptible difference in the motion of the carriages; altogether, it is pronounced to be no longer an experiment, but *unfailingly accomplished*. What was deemed to be a problem by the uninitiated is now perfectly solved.

A few data of the line of railway and the machinery may not be uninteresting. When finished, there will be, in length, 9,200 feet of open pipe; the close pipe forming the connection with the air pipe is upwards of 400 yards. The engine is 100 horse-power—to be worked on the expansive condensation principle. The air-pump is a double stroker; its diameter sixty-seven inches: the

diameter of the tube or open pipe fifteen inches. The station at Dalkey is seventy-six feet higher than that at Kingstown: the elevation varies—1 in 57 being the greatest, 1 in 240 being the least, and the main ascent being 1 in 115. It is computed that the train will descend from Dalkey by its own gravity, at the rate of from thirty to thirty-five miles an hour. The sharpest curve is only 547 feet radius.—*Dublin Pilot*.

Another trial has taken place in the presence of the Lord Lieutenant, with still more signal success than the experiment before recorded. Two carriages ascended at the rate of twenty-five miles an hour, in three minutes, and returned down the inclined plane, by their own momentum, in five minutes. A rate of fifty miles an hour may be easily obtained with perfect safety, with the impossibility almost of danger. Young as the railway system is, this most triumphant experiment will have the effect of working a complete revolution in locomotion.—*Dublin Evening Post*.

DESIGNS FOR A COTTAGE.

TO THE EDITOR.

SIR,—I enclose you a design for a cottage intended to be built with limestone (the only material here) in random courses, the chimney stacks, window and door jambs, &c. to be tooled rough. The roofs of the bay windows limestone built into the walls; the chimney breasts and flues fire-bricks; the flues of living room or kitchen, and parlour, and the rooms over them, to be carried into the

wall between those rooms. a, staircase, 10X10; b b b, closets, the bottom one for coats, hats, or a water-closet; c, parlour, 16X14; d, living-room or kitchen, 15X13, without the bay; e, pantry, 12X6; f, back kitchen, 12X9; g, steps to cellars, to be sunk under the pantry and back kitchen, and arched over; h h h, bed rooms. Perhaps it would be advisable to put the pantry door from the back kitchen and the living room or kitchen fire-place, where the pantry door is at present shown on the plan. Your obedient servant.

Rathlin, 18th August, 1843.

J. H. C.



Entrance Elevation.



Side Elevation.